

STATEMENT OF THE CLAIMS

1. (currently amended) An apparatus for occluding a blood vessel having an inner wall with an interior diameter, wherein the inner wall defines a lumen with a longitudinal axis, the apparatus comprising:

a. a plug for insertion along the longitudinal axis into the lumen of the blood vessel, the plug having a tapered outer surface, ~~and a large diameter section, a rearward-facing opening into an interior chamber, and a plurality of spokes that extend rearward from said interior chamber and radially outward toward the inner wall of the blood vessel, the large diameter section having~~ with a cross-sectional diameter greater than the interior diameter of the lumen of the inner wall and said plug being sufficiently rigid in order to resist compressive forces applied thereto by the inner wall of the blood vessel such that the plug is gripped by compressive forces exerted by the elastic nature of the inner wall of the blood vessel and thereby occludes blood flow through the lumen of the blood vessel; and

b. an insertion device having means to attach the plug to the insertion device and means for providing an axial force to insert the plug into the blood vessel.

2. (currently amended) The apparatus as recited in claim 1 wherein the plug has a pilot hole disposed within said interior chamber to enable the plug to be attached to the insertion device.

3. (currently amended) The apparatus as recited in claim 1 wherein the plug has an inner corrugated surface and a pilot hole each disposed within said interior chamber to enable the plug to be attached to the insertion device.

4. (cancelled)

5. (original) The apparatus as recited in claim 1 wherein the plug is made of silicon.
6. (currently amended) The apparatus as recited in claim 1 wherein the insertion device further comprises:
- a. a needle;
 - b. a tubular needle guard surrounding the needle, the ~~tubular needle guard~~ fitting into a pilot hole of the plug;
 - c. a spring connected to the needle to propel the needle outwards; and
 - d. a lever operable to compress and decompress the spring.
7. (currently amended) A plug for occluding a blood vessel having an inner wall with an interior diameter, wherein the inner wall defines a lumen, the plug comprising:
- a tapered outer surface, and a large diameter section, a rearward-facing opening into an interior chamber, and a plurality of spokes that extend rearward from said interior chamber and radially outward toward the inner wall of the blood vessel, the large diameter section having with a cross-sectional diameter greater than the interior diameter of the lumen of the inner wall and said plug being sufficiently rigid in order to resist compressive forces applied thereto by the inner wall of the blood vessel such that the plug is gripped by compressive forces exerted by the elastic nature of the inner wall of the blood vessel when inserted into the lumen of the blood vessel by an insertion device to thereby occlude blood flow through the lumen of the blood vessel; and

attachment means, disposed within said interior chamber of said plug, for
attaching the plug to the insertion device.

8. (original) The plug as recited in claim 7 wherein the attaching means is a pilot hole to enable the plug to be attached to the insertion device.

9. (cancelled)

10. (currently amended) The plug as recited in claim 7 further comprising an inner corrugated surface disposed within said interior chamber.

11. (cancelled)

12. (original) The plug as recited in claim 7 wherein the plug is made of silicone.

13 -14 (cancelled)

15. (currently amended) The apparatus as recited in claim 1 wherein ~~the plug further comprises a plurality of spokes that project rearward and radially outward from within said large diameter section~~ said rearward-facing opening is defined by at least one edge, and said plurality of spokes extend through said rearward-facing opening at positions offset from said at least one edge.

16. (currently amended) The apparatus as recited in claim 1 ~~15~~ wherein said spokes extend radially outward to tips that are spaced apart in an annular fashion at a diameter greater than the cross-sectional diameter of the large diameter section.

17. (currently amended) The apparatus as recited in claim 1 ~~15~~ wherein said spokes comprise metal.

18. (previously presented) The apparatus as recited in claim 17 wherein said metal comprises tungsten.

20. (cancelled)

21. (currently amended) The plug as recited in claim 7 ~~further comprising a plurality of spokes that project rearward and radially outward from within said large diameter section~~ wherein said rearward-facing opening is defined by at least one edge, and said plurality of spokes extend through said rearward-facing opening at positions offset from said at least one edge.

22. (currently amended) The plug as recited in claim 7 ~~21~~ wherein said spokes extend radially outward to tips that are spaced apart in an annular fashion at a diameter greater than the cross-sectional diameter of the large diameter section.

23. (currently amended) The plug as recited in claim 7 ~~24~~ wherein said spokes comprise metal.

24. (previously presented) The plug as recited in claim 23 wherein said metal comprises tungsten.